

## Statistics 956 Homework No. 1

### Experience with R and WRDS — Focused on the First Stylized Facts

- If you have not done so already, install R on your personal machine and work through one of the web tutorials to get the hang of it. At this point don't worry too much about data structures, etc. For starters just learn how to do arithmetic, write a function with a “for loop” and do an x-y plot.
- Go to WRDS and CRSP and download the daily returns for a stock of your choice for the last 10 years.
- Test the daily returns for normality. Explore the various normality tests available in R.
- Use your daily returns to build a series of 5 day returns and a series of 20 day returns. Repeat your normality tests on these two return series.
- Fit AR(1) and AR(3) models to your three series.
- Do a Ljung-Box test on your three series.
- Summarize what the results of your tests and fits on ONE PAGE.

### The Summary and Its Uses

Human beings are a lazy species and this laziness leads them to do things that they themselves know to be very silly — but they do it anyway. One of the silly things is to cut and paste p-values or parameter estimates with far more digits than we know to be meaningful. In your reports, just report what you believe to be meaningful. Typically this means giving estimates with just two decimals, and we should be suspicious even of these.

For this homework, your report can be very, very short. Just because you have a one page allocation, it does not mean that you have to use the whole page.

We will use these reports in class, so be prepared to comment on what you have found.